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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/629,364	08/01/2000	R. Lawrence Ives	CALA-073100	6104

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EXAMINER

LEE, BENNY T

ART UNIT PAPER NUMBER

2817

DATE MAILED: 04/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES DEPARTMENT OF COMMERCE  
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SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.

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	11

DATE MAILED:

This is a communication from the examiner in charge of your application.

COMMISSIONER OF PATENTS AND TRADEMARKS

- ☐ This application has been examined ☒ Responsive to communication filed on 26 Nov 2002 <sup>10 Jan 2003</sup> ☒ This action is made final.

A shortened statutory period for response to this action is set to expire 12 month(s), 12 from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- |  |   |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892.       | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948.                  |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449             | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152 |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474 | 6. <input type="checkbox"/>   |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-32 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☒ Claims 1-7 are allowed.
4. ☒ Claims 8-26; 27-32 are rejected.
5. ☐ Claims \_\_\_\_\_ are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings which are acceptable for examination purposes until such time as allowable subject matter is indicated.
8. ☐ Allowable subject matter having been indicated, formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. These drawings are ☐ acceptable;  
☐ not acceptable (see explanation).
10. ☒ The ☒ proposed drawing correction and/or the ☒ proposed additional or substitute sheet(s) of drawings, filed on 26 Nov 2002, has (have) been ☒ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved. ☐ disapproved (see explanation). However, the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are corrected. Corrections **MUST** be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO EFFECT DRAWING CHANGES", PTO-1474.
12. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received  
☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

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The disclosure is objected to because of the following informalities: In the replacement paragraph to page 20, line 23, note that amended reference labels (130, 132) do not appear consistent with the labeling in Figs. 4, 4-1, 4a-4c. Appropriate correction is required.

The disclosure is objected to because of the following informalities: Note that in the detail description of the drawing figures, all labeled features need to be explicitly described in the specification description of each figure. Furthermore, if the specification description references more than one drawing figure, labeled features need to be reference to the figure(s) in which they actually appear. Examples include "electron guns 230" in Fig. 10, "axis 152" in fig. 6b, features (156a, 156b) in Fig. 9, elements (140, 178, 210) in fig. 10, etc. Appropriate correction is required.

The drawings are objected to because of the following: In fig. 4, reference label --106n-- needs to be provided; In fig. 4a, reference label --174-- needs to be provided; In fig. 6a, reference labels (102, 106) need to be provided. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

In view of applicants' comments, it is suggested that for those instances where a particular feature can not be depicted in a particular drawing figure, the specification should be amended to either refer the particular feature in which it is actually depicted or indicate that such feature is not depicted in the drawing figure in question.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CAR 1.75(d)(1) and MPEP § 608.01(o). Correction of the

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following is required: The oscillator and amplifier of claim 25, 26 need disclosure in the specification. While applicants' have refer to places in the specification (i.e. the Background Art) where amplifiers & oscillators are discussed, there is still no explicit disclosure of amplifiers & and oscillators used in context with applicants' invention (i.e. there is no disclosure of amplifiers or oscillators in the "Detail Description of the Invention").

Claims 8-24, 25/8, 26/8; 27-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 8, fifth paragraph, note that "each said electron gun having a cathode ..." appears to be a redundant recitation in view of the amendment to the third paragraph of the claim.

In claims 8-14, 16, 17, 21-24, note that it remains unclear which one of the "at least one field correctors" is intended by the recited "said field corrector". In other words, "said field corrector" defines only one of the "at least one field correctors". If it is applicants' intent that the claimed limitations pertain to the "at least one field correctors", then --at least one-- should be inserted between "said" & "field corrector" at each occurrence.

In claim 15, note that "said coil" is indefinite for the dependency from claim 11 since "first and second" coils are recited therein, and "said correction field" is not definite since only claim 12 has defined a "correction field".

In claims 16, 17, 19, 20, note that reference to a "permanent magnet" or "non-magnetized iron" being the "field corrector" is improper since these claims depend from claims which already

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define the field corrector as a "coil". Note that even with the deletion of certain multiple dependencies, this deficiency has not been overcome.

In claims 18, 19, 20, note that the recitation of "at least one (correction coil/corrector)" is not consistent with the single correction coil/single corrector already recited at least in claims 9, 10, from which these claims directly depend.

In claim 21, note that "main" should be --central-- and the relative terms "smaller" and "larger" are vague in meaning (e.g. smaller than what?).

In claim 27, note that use of the term "optionally" renders the claim vague and indefinite (i.e. are the additional field correctors there or not?).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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Claims 8, 12, 14, 15/12, 18/12, 20/12, 25/8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mourier in view of either Nevins, Jr. or Tran et al (all of record).

Mourier comprises a magnetic focussing arrangement suitable for use in multi-beam electron devices (e.g. multi-beam Klystron) comprising two disks (20, 22) having apertures (A, D, A', D') therethrough for the passage of plural electron beams (10). A magnetic structure (24) provides for primary focussing of the electron beam (10) in the region between plates (20, 22). Because of electron drift between the plates (20, 22) as shown in Fig. 1, an auxiliary magnetic correcting structure (30) including current carrying coils (36, 38) is provided to correction due to radial electron drift through use a correction magnetic field. Alternative magnetic correcting structure (30) may comprise a ferromagnetic part (48) such as iron as depicted in Fig.6. Note that as a consequence of the radial drift correction, the resultant magnetic field will be perpendicular to the emitting surface of the electron gun. Mourier, thus differs from the claimed invention in that the specific structure of the claimed multi-beam device is not disclosed therein.

Both Nevins, Jr. and Tran et al disclose a multi-beam electron device having the specific structure as claimed.

Accordingly, it would have been obvious in view of the references, taken as a whole, to have modified the multi-beam electron device of Mourier with either multi-beam electron device of Nevins, Jr. or Tran et al. Such a modification would have been considered obvious since the generic nature of the multi-beam electron device of Mourier would have suggested that any equivalent multi-beam electron device (such as in Nevins Jr. and Tran et al) would have been

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usable therewith, thereby suggesting the obviousness of such a modification. Furthermore, as an obvious consequence of such a modification, the resultant multi-beam device would have functioned as an oscillator, as taught by either Nevins Jr. or Tran et al.

Applicant's arguments filed 26 November 2002 have been fully considered but they are not persuasive.

Applicants' have argued that the Mourier reference fails to disclose a magnetic field correction which causes the magnetic field to be perpendicular to the face of the cathode. It is further argued that Mourier removes the radial component of magnetic field as contrast with the inventive magnetic corrector which works close to the face of the cathodes.

While such may be applicants' intentions, it should be noted that the limitations recited in amended claim 8 do not specifically limit the magnetic field corrector to "close to the face of the cathodes" as asserted by applicants'. Therefore, any of the magnetic field correcting locations in Mourier would have met the claimed limitations. More importantly, as noted in the rejection above, the magnetic field corrector removes the radial component from the magnetic field, which in turns removes angular drift of the electron beam. Accordingly, the resultant magnetic field would, as a consequence of the magnetic field correction, have been necessarily perpendicular to the cathode of the electron gun to have confined the electron gun in a direction perpendicular to the electron gun.

Claims 27-32 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

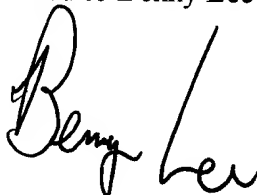
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Claims 1-7 are allowable over the prior art.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CAR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CAR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benny Lee whose telephone number is (703) 308 4902.



BENNY T. LEE  
PRIMARY EXAMINER  
ART UNIT 2817

B. Lee

April 5, 2003